# PHYSICS LETTERS B

*Abstracted/Indexed in: Current Contents: Physical, Chemical & Earth Sciences/INSPEC*

**Volume 409, numbers 1,2,3,4** **18 September 1997**


## Contents


**Instructions to authors** v

### Nuclei

**Charge conservation for nonrelativistic RPA theory**
Y. Horikawa and Y. Tanaka 1

**The nuclear liquid-gas phase transition within fermionic molecular dynamics**
J. Schnack and H. Feldmeier 6

**Higher order Bose-Einstein correlations for systems with large halo**
T. Csörgő 11

**Triton binding energies for modern NN forces and the $\pi$-$\pi$ exchange three-nucleon force**
A. Nogga, D. Hüber, H. Kamada and W. Glöckle 19

**In-medium effective axial-vector coupling constant**
T.-S. Park, H. Jung and D.-P. Min 26

**Consequences of a charge-symmetry breaking mechanism for the charge-asymmetry parameter $A_\pi(\theta)$ of low-energy elastic $\pi$D scattering**
R.M. Rockmore 33

**New source term for QGP formation in the background-field model**
R.S. Bhalerao and V. Ravishankar 38

**The asymptotic method developed from weak turbulent theory and the nonlinear permeability and damping rate in QGP**
X. Zheng and J. Li 45

**$\eta$-meson photoproduction off protons and deuterons**
C. Deutsch-Sauermann, B. Friman and W. Nörenberg 51

**Charge equilibration in heavy-ion reactions at intermediate energies**
R. Donangelo and S.R. Souza 58

**Search for $^{28}$O and study of neutron-rich nuclei near the $N = 20$ shell closure**
O. Tarasov et al. 64

**Four independent decay properties in the super-deformed well of $^{143}$Eu**
S. Leoni et al. 71

**Exclusive $\pi^0$- and $\eta$-meson production in $^{40}$Ar + $^{nat}$Ca at 800$A$ MeV**
A. Marín et al. 77

### Particles and fields

**The equivalence principle and $g - 2$ experiments**
C. Alvarez and R.B. Mann 83

**Evaporation of three dimensional black hole in quantum gravity**
I. Oda 88

**Cosmological axion problem in chaotic inflationary universe**
S. Kasuya, M. Kawasaki and T. Yanagida 94

**Interaction of moving D-branes on orbifolds**
F. Hussain, R. Iengo, C. Núñez and C.A. Scrucca 101

**Branes and six dimensional fixed points**
I. Brunner and A. Karch 109

**Supermembranes with winding**
B. de Wit, K. Peeters and J.C. Plefka 117

**A note on the transverse five-brane in M(atrix) theory**
G. Lifschytz 124

**Membrane tension and manifest IIB S-duality**
P.K. Townsend 131


**(Continued inside)**

0370-2693(19970918)409:1-4;1-K

# PHYSICS LETTERS B

*Abstracted/Indexed in: Current Contents: Physical, Chemical & Earth Sciences/INSPEC*

**Volume 409, numbers 1,2,3,4** **18 September 1997**


## Contents


**Instructions to authors** v

### Nuclei

**Charge conservation for nonrelativistic RPA theory**
Y. Horikawa and Y. Tanaka 1

**The nuclear liquid-gas phase transition within fermionic molecular dynamics**
J. Schnack and H. Feldmeier 6

**Higher order Bose-Einstein correlations for systems with large halo**
T. Csörgő 11

**Triton binding energies for modern NN forces and the $\pi$-$\pi$ exchange three-nucleon force**
A. Nogga, D. Hüber, H. Kamada and W. Glöckle 19

**In-medium effective axial-vector coupling constant**
T.-S. Park, H. Jung and D.-P. Min 26

**Consequences of a charge-symmetry breaking mechanism for the charge-asymmetry parameter $A_\pi(\theta)$ of low-energy elastic $\pi$D scattering**
R.M. Rockmore 33

**New source term for QGP formation in the background-field model**
R.S. Bhalerao and V. Ravishankar 38

**The asymptotic method developed from weak turbulent theory and the nonlinear permeability and damping rate in QGP**
X. Zheng and J. Li 45

**$\eta$-meson photoproduction off protons and deuterons**
C. Deutsch-Sauermann, B. Friman and W. Nörenberg 51

**Charge equilibration in heavy-ion reactions at intermediate energies**
R. Donangelo and S.R. Souza 58

**Search for $^{28}$O and study of neutron-rich nuclei near the $N = 20$ shell closure**
O. Tarasov et al. 64

**Four independent decay properties in the super-deformed well of $^{143}$Eu**
S. Leoni et al. 71

**Exclusive $\pi^0$- and $\eta$-meson production in $^{40}$Ar + $^{nat}$Ca at 800$A$ MeV**
A. Marín et al. 77

### Particles and fields

**The equivalence principle and $g - 2$ experiments**
C. Alvarez and R.B. Mann 83

**Evaporation of three dimensional black hole in quantum gravity**
I. Oda 88

**Cosmological axion problem in chaotic inflationary universe**
S. Kasuya, M. Kawasaki and T. Yanagida 94

**Interaction of moving D-branes on orbifolds**
F. Hussain, R. Iengo, C. Núñez and C.A. Scrucca 101

**Branes and six dimensional fixed points**
I. Brunner and A. Karch 109

**Supermembranes with winding**
B. de Wit, K. Peeters and J.C. Plefka 117

**A note on the transverse five-brane in M(atrix) theory**
G. Lifschytz 124

**Membrane tension and manifest IIB S-duality**
P.K. Townsend 131


**(Continued inside)**

0370-2693(19970918)409:1-4;1-K

# PHYSICS LETTERS B

**Volume 409, numbers 1,2,3,4** **18 September 1997**


## Contents

**(Continued from page 4 of cover)**


**Supersymmetry without supersymmetry**
M.J. Duff, H. Lü and C.N. Pope 136

**Symplectic structures and self-dual fields in $(4k+2)$ dimensions**
I. Giannakis and V.P. Nair 145

**SL(2,Z) duality of Born-Infeld theory from non-linear self-dual electrodynamics in 6 dimensions**
D. Berman 153

**The paths of unification in the GUST with the $G \times G$ gauge groups of $E(8) \times E(8)$**
A. Maslikov, I. Naumov and G. Volkov 160

**Universality of hypercubic random surfaces**
S. Bilke, Z. Burda and B. Petersson 173

**One loop in eleven dimensions**
M.B. Green, M. Gutperle and P. Vanhove 177

**Chiral multiplets in $N = 1$ dual string pairs**
G. Curio 185

**Finite soft terms in string compactifications with broken supersymmetry**
I. Shah and S. Thomas 188

**On the fermionic quasi-particle interpretation in minimal models of conformal field theory**
A.A. Belavin and A. Fring 199

**Exact renormalization group for O(4) gauged supergravity**
L.N. Granda and S.D. Odintsov 206

**Distinguishing gauge-mediated from unified-supergravity spectra**
A. Strumia 213

**More missing VEV mechanism in supersymmetric SO(10) model**
Z. Berezhiani and Z. Tavartkiladze 220

**The sTB-B hierarchy**
J.C. Brunelli and A. Das 229

**Comments on higher derivative operators in some SUSY field theories**
M. Dine and N. Seiberg 239

**Quantum restoration of the $U(1)_Y$ symmetry in dynamically broken SUSY-GUT's**
T. Hotta, K.-I. Izawa and T. Yanagida 245

**$N = 2$ super Yang-Mills low-energy effective action at two loops**
A. De Giovanni, M.T. Grisaru, M. Roček, R. von Unge and D. Zanon 251

**On three dimensional bosonization**
J.C. Le Guillou, E. Moreno, F.A. Schaposnik and C. Núñez 257

**Stops in $R$-parity breaking model for high-$Q^2$ events at HERA**
T. Kon and T. Kobayashi 265

**HERA events, tevatron jets, and uncertainties on quarks at large $x$**
S. Kuhlmann, H.L. Lai and W.K. Tung 271

**Atomic parity violation in cesium and implications for new physics**
A. Deandrea 277

**Constraints on leptoquark masses and couplings from rare processes and unification**
G.K. Leontaris and J.D. Vergados 283

**Resummation and the MSW effect inside a supernova core**
R. Horvat 288

**New physics potential with a neutrino telescope**
N. Arteaga-Romero, C. Carimalo, A. Nicolaidis, O. Panella and G. Tsirigoti 299

**A natural solution to the neutrino mixing problem**
C.D. Froggatt, M. Gibson and H.B. Nielsen 305


**(Continued on preceding page)**

# PHYSICS LETTERS B

**Volume 409, numbers 1,2,3,4** **18 September 1997**


## Contents

**(Continued from following page)**


**The production of anti-matter in our galaxy**
P. Chardonnet, J. Orloff and P. Salati 313

**Vector and scalar confinement in gauge theory with a dilaton**
R. Dick 321

**Differential regularization of Chern-Simons-Maxwell spinor and scalar electrodynamics**
M. Chaichian, W.F. Chen and H.C. Lee 325

**Shape fluctuations of dual Dirac strings in the dual Higgs model with dual Dirac strings**
M. Faber, A.N. Ivanov, N.I. Troitskaya and M. Zach 331

**P and T odd nucleon-nucleon interaction in a two higgs doublet model**
U. Mahanta 339

**Probing flavor changing neutral Higgs couplings at LHC**
W.-S. Hou, G.-L. Lin, C.-Y. Ma and C.-P. Yuan 344

**Quantum statistics of ideal parafermi gases: The Slater quasi-determinant**
M. Rachidi, E.H. Saidi and J. Zerouaoui 349

**Comparison of renormalization-group and lattice studies of the electroweak phase transition**
N. Tetradis 355

**Large $N$ and the renormalization group**
M. D'Attanasio and T.R. Morris 363

**Quantum fluctuations versus topology – a study in $U(1)_2$ lattice gauge theory**
C.R. Gattringer, I. Hip and C.B. Lang 371

**Classical lattice gauge fields with hard thermal loops**
C.R. Hu and B. Müller 377

**Large-order behaviour of the QCD Adler $D$-function in planar approximation**
C.J. Maxwell 382

**Electromagnetic structure of light baryons in lattice QCD**
A. Duncan, E. Eichten and H. Thacker 387

**Increase of effective string tension and production of strange particles**
A. Tai and B.-H. Sa 393

**Constraints on anomalous gauge couplings from present LEP1 and future LEP2, BNL data**
F.M. Renard, S. Spagnolo and C. Verzegnassi 398

**A simple approximation of the one-loop corrected cross section for $e^+e^- \to W^+W^-$ at LEP 2**
M. Kuroda, I. Kuss and D. Schildknecht 405

**Hyperfine interactions in charm and bottom systems**
H.J. Lipkin and P.J. O'Donnell 412

**Violations of local duality in the heavy quark sector**
P. Colangelo, C.A. Dominguez and G. Nardulli 417

**Leading logarithmic QCD corrections to the $B_s \to \gamma\gamma$ decay rate including long-distance effects through $B_s \to \phi\gamma \to \gamma\gamma$**
G. Hiller and E.O. Iltan 425

**The semileptonic exclusive $B$- and $D$-decays on the light-front**
N.B. Demchuk, P.Yu. Kulikov, I.M. Narodetskii and P.J. O'Donnell 435


**(Continued on preceding page)**

# PHYSICS LETTERS B

**Volume 409, numbers 1,2,3,4** **18 September 1997**


## Contents

**(Continued from following page)**


**Effects of the electroweak symmetry breaking sector in rare $B$ and $K$ decays**
G. Burdman 443

**A convergent reformulation of QCD perturbation theory**
C.J. Maxwell 450

**Pion loops in quenched quantum chromodynamics**
G. Colangelo and E. Pallante 455

**Comment on the prediction of two-loop standard chiral perturbation theory for low-energy $\pi\pi$ scattering**
L. Girlanda, M. Knecht, B. Moussallam and J. Stern 461

**$\Delta I = 3/2$ and $\Delta S = 2$ hyperon decays in chiral perturbation theory**
X.-G. He and G. Valencia 469

**Multiplicity and transverse energy distributions associated to rare events in nucleus-nucleus collisions**
J. Dias de Deus, C. Pajares and C.A. Salgado 474

**Collective flow or random walk?**
S. Esumi, U. Heinz and N. Xu 479

**Quark-antiquark resonances in the NJL model**
V. Bernard, A.H. Blin, B. Hiller, Y.P. Ivanov, A.A. Osipov and U.-G. Meißner 483

**Dual Shapiro-Virasoro amplitudes in the dipole picture of QCD at small $x$**
R. Peschanski 491

**On the QCD evolution of the transversity distribution**
V. Barone 499

**The one-loop QCD corrections for $\gamma^* \to q\bar{q}gg$**
J.M. Campbell, E.W.N. Glover and D.J. Miller 503

**Thirring's low-energy theorem and its generalizations in the electroweak Standard Model**
S. Dittmaier 509

**Role of neural networks in the search of the Higgs boson at LHC**
T. Maggipinto, G. Nardulli, S. Dusini, F. Ferrari, I. Lazzizzera, A. Sidoti, A. Sartori and G.P. Tecchiolli 517

**Cumulative author index to volumes 401–409** 523